Research Report 1257



CAREER PLANNING MODULES FOR THE OFFICER CAREER INFORMATION AND PLANNING SYSTEM

Susan D. Phillips, Peter C. Ca :o, Roger A. Myers, Theodore G. Ryan, Gilbert L. Hoffer, and Marjorie Croes-Silverman Teachers College, Columbia University

PERSONNEL UTILIZATION TECHNICAL AREA





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CAREER PLANNING MODULES FOR THE OFFICER CAREER INFORMATION

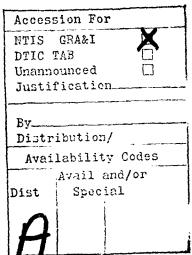
AND PLANNING SYSTEM

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PERSONNEL UTILIZATION TECHNICAL AREA



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Career Progression Systems

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ARI Research Reports and Technical Feports are intended for sponsors of R&D tasks and for other research and military agencies. Any findings ready for implementation at the time of publication are presented in the last part of the Brief. Upon completion of a major phase of the task, formal recommendations for official action normally are conveyed to appropriate military agencies by briefing or Disposition Form.

Part of the research of the Personnel Utilization Technical Area of the Personnel and Training Research Laboratory of the Army Research Institute (ARI) supports effective career management for Army officers. One result of this research has been the design and field cryout of an experimental computer-based Officer Career Information and Planning System (OCIPS). This report describes the design of the system, the development of interactive modules, and the experimental use of a sample of the modules to determine accuracy, credibility, interest, and operational feasibility.

Research in career counseling and career management has been performed jointly as an in-house ARI effort and through contracts with organizations selected for their specialized expertise. The current research involving application of career counseling expertise to the Army Officer Personnel Management System was performed under Contract DAHC 19-76-C-0030 with vocational psychologists at Teachers College of Columbia University. The research effort was directed by Bertha H. Cory under requirements of Army Project 20162717A766, Task C, Career Progression Systems, FY 1978 Work Program.

JOSEPH ZEIDNER Technical Director

CAREER PLANNING MODULES FOR THE OFFICER CAREER INFORMATION AND PLANNING SYSTEM

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Requirement:

In response to a need seen by the Army for a cost-effective career planning system which would (a) place computerized data at the disposal of both the career development manager and the officer and (b) facilitate the implementation of the Army policy of officer professional development and utilization, the Officer Career Information and Planning System (OCIPS) was designed. The report describes the design of the interactive dialogue modules to promote long-term career planning as a part of the Officer Personnel Management System (OPMS).

Procedure:

Current theory and opinion on adult career development were analyzed, adapted and extended to meet the needs of the project. Five basic concepts, considered important for the Army officer were identified: that choice is inevitable; that one should base choices on self-understanding; that not every career outcome is predictable; that planning requires a combination of commitment and tentativeness; and that life stages provide predictable changes. Attendant to these concepts, a variety of career planning skills (e.g., clarifying one's values) were identified. Interactive dialogues were designed to teach the concepts and to provide opportunity for practice in the skills.

Product:

The resulting dialogues provide: (1) an introduction of the officer to the computer (2) an introduction to the concepts of long-term career planning; (3) a comprehensive look at how the Army career system works; (4) shortened combined version of (2) and (3); (5) an opportunity to draw information from a data base on alternate specialty; (6) an exercise designed to increase the user's awareness of his/her career-relevant skills and values; and (7) practice at establishing long-term career goals.

Four of the seven dialogues were tested for feasibility and credibility with 52 company grade officers who found the modules interesting, accurate and useful.

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CAREER PLANNING MODULES FOR THE OFFICER CAREER INFORMATION AND PLANNING SYSTEM

Introduction

The recent identification of career planning as a salient issue for adults and the scarcity of professional assistance in that problem area has led career development specialists to seek alternative approaches to educational and career planning. One such approach is the computer-aided guidance system. A number of such systems have been developed in a variety of settings, primarily intended for use among high school and college students. The system described here is one of the first designed to enhance the career planning skills of adults whose careers are already in progress.

Adult career planning. Recognition of the need for career planning in adulthood emerged from the notion of a career as a series of positions, jobs, and occupations that extend throughout the life of the individual (Super, Crites, Hummel, Moser, Overstreet, & Warnath, 1957). This view of work life emphasizes the development of persons throughout their life span in contrast to the mere prediction of success and satisfaction from Point A (preparation and anticipation) to Point B (entry to an occupation). Buehier's (1933) concept of life stages, long considered useful by developmental psychologists, became highly relevant for vocational psychologists as well. The stages of growth, exploration, establishment, maintenance and decline bore observable relationships to the tasks which beset individuals as they imagined, prepared for, sought admission to, entered, advanced in, retired from and reflected upon their life's work. The work of Havighurst (1953) and Super (1957) has made clear the need for individuals to cope with differing problems at different stages in order that their career development proceed smoothly.

The understanding of career phenomena from a developmental framework created renewed interest in the career behavior of adults. Studies such as those by Astin and Panos (1969) and Davis (1965) carefully documented the fact that, during the college years, career-related choices were made and revised for more than half the population. The work of Cooley and Lohnes (1969), Gribbons and Lohnes (1969), and Super, Kowalski and Gotkin (1967) emphasized the fact that, beyond the college years, job and position changes were frequent, career decision making remained a persistent developmental task, and—by and large—adults continued to need help with planning their long—te ma futures.

This demonstrated need for career decision making during adulthood underscores the validity of the view of career decision making as a continuous recycling of the stages of the decision-making process (Katz, 1963). Of particular importance in this process is the continuing exploration of vocational alternatives. Individuals who engage in vocational exploration undertake activities with the purpose of gathering information about themselves and their environments which will prepare them to choose, prepare for, enter, adjust to, or progress in an occupation (Jordaan, 1974). Meaningful

exploration can help the individual (1) assess the outcomes associated with various vocational alternatives, (2) assess the desirability of those outcomes, and (3) assess the probability of achieving those outcomes (Prediger, 1974). Vocational exploration is, therefore, necessary and inevitable for an individual faced with a career decision.

Applying computer technology to career guidance. To provide assistance in the problem area of long-term educational and career planning, career development specialists have sought to adapt available resources in computer technology to the specific career planning tasks. Current approaches to the use of computers in educational and vocational guidance are based on two theories (Super, 1970). First is the pragmatic theory which asserts that the more information that is available to individuals, regarding both self and world of work, the better their vocational decisions are likely to be. Second is the developmental decision-making theory which reflects the view that a career develops—and, thus, decisions are required—over the life span, rather than as a result of specific, point—in—time, educational or vocational choices.

The technological capacity of the computer is widely recognized and has considerable potential when applied to the process of career decision making. The computer provides the capacity (1) to store, retrieve and update large amounts of data, (2) to interrelate data about individuals and their environments, (3) to individualize data to generate educational and career alternatives, (4) to simulate conversations of interviews through interactive terminal devices, (5) to modify user behavior to provide feedback, review and personalized assistance to counselor or client, (6) to control and coordinate audio and visual material with text, and (7) to provide services to many users simultaneously in various settings (Harris & Tiedeman, 1974). By making use of these capabilities, career development specialists have been able to provide the needed assistance to individuals at their different developmental stages in terms of information gathering, vocational exploration, and career decision making.

Several computer-aided counseling and guidance systems are currently in operation. The Computerized Vocational Information System (Harris, 1968), the Education and Career Exploration System (Minor, Myers & Super, 1969), Oregon's Career Information System (McKinlay, 1974), and DISCOVER (Rayman & Harris-Bowlsbey, 1977) are examples of systems developed for use with high school populations. Another, the System for Interactive Guidance and Information, developed by Katz and his associates, has been designed for use with college students (Katz, Chapman, & Godwin, 1972).

The effects of these systems have been studied and, in general, the results have been encouraging. Although no studies have yet demonstrated that the systems have been effective in improving the users' decision-making skills, other relevant skills have been measurably enhanced. Specifically, as a result of using computer-aided counseling and guidance systems, users increased their vocational maturity (Myers, Thompson, Lindeman, Super, Patrick, & Friel, 1972); users achieved more specificity of information about educational and vocational alternatives, showed greater crystallization of vocational

planning, and gained more information about career alternatives (Harris, 1972); and users indicated that they learned to operate them easily, did not feel dehumanized by their use, and enjoyed using them (Myers, et al., 1972).

The computer-aided counseling and guidance systems that are currently in operation, however, were developed primarily for use among high school and college students. Recognizing the potential of a system intended specifically for an adult population, the Army Research Institute began the development of an Officer Career Information and Planning System (OCIPS) which is designed to utilize knowledge of adult career planning and existing computer technology to further the professional development of Army officers.

The Officer Career Information and Planning System (OCIPS)

OCIPS is being developed in response to a need seen by the Army for a cost-effective career planning system which (a) would place computerized data at the disposal of both the career development manager and the officer and (b) would facilitate the implementation of the Army policy of officer professional development and utilization as expressed in DA Pamphlet 600-3. Prior to the initiation of the project, several legitimate complaints on the part of officers had been recognized. These included, specifically, the lack of readily available, consistent, complete, and current information regarding the officer career progression system. There was also evidence to suggest that better use of officer interests and abilities was possible and that inefficient officer career decisions were being made (Macpherson, Note 11; Macpherson, Eastman, & Yates, Note 12).

Drawing on theory and research in counseling psychology and technologies in computer science, OCIPS is envisioned as a computer-aided career information and planning system for Army officers (Cairo, Note 1; Cory, Medland, & Uhlaner, Note 3; Cory, Medland, Hicks, Castelnovo, Weldon, Hoffer, & Myers, Note 2; Van Nostrand, Note 19). It is hoped that this system will provide a number of benefits to the Army officer and to Army management, including:

- --greater ability of an officer to take responsibility for his or her own career decision making;
- --greater officer satisfaction and increased knowledge of the career-enhancing potentialities of various assignments;
- --better fit of officer-to-job based on the consideration of aptitudes, values, interests, education, training, and experiences; and
- --greater equity and efficiency in the career management system.
- --greater opportunity for career managers to concentrate on counselor functions.

In order to begin to accomplish these goals, the initial phase of the system's development, described in this report, called for a long-range

career planning dialogue unit that would enable Army officers to explore planning strategies and decision-making techniques and to develop and apply career goals and values to their own long-term career planning. It was decided that the system would need to conform to a number of specifications. First, the dialogue units should allow the officer to explore career-related values and strategies for implementing those values. The units should advocate flexibility in career planning and be applicable to Army careers. Second, the dialogues should appear as a natural conversation between an officer and a human counselor, using explicit, concise language tailored to Army officer background and interests. Finally, the dialogues should be designed to increase the officer's awareness of the notion of a career as a time-ordered sequence of positions, mediated partly by his or her own choices.

Conceptual Development

From these objectives and specifications, the team at Teachers College, Columbia University, directed by Roger A. Myers, proposed to create a set of computer-aided experiences for teaching various career planning concepts and for enhancing career-relevant competencies. The specific concepts, on which the long-term career planning portion of the system is based, are those that emerged from Super's (1957) longitudinal study of career development. The concepts represent those notions that research has shown to be essential for consideration in career planning. They are:

- 1. The inevitability of choice: stressing the opportunity and obligation on the part of an individual to make certain choices, and reviewing the consequences of not choosing when choice is indicated;
- 2. Choice as an implementation of values: introducing the notion that the major determinant of any given choice ought to be the values of the chooser, necessitating some clarity about one's own value system;
- 3. <u>Contingencies and discontinuities</u>: making explicit the implicitly obvious existence and influence of events that one is unable to predict;
- 4. Clarity and tentativeness: illustrating the necessity of having clear, well-designed plans, while simultaneously recognizing the unavoidable tentative nature of such plans; and
- 5. <u>Life stages</u>: focussing on the available knowledge of career-related behavior at different points in an individual's development.

Such research has also shown that certain competencies in career planning tasks must be developed in order to negotiate a career successfully. Drawing on this body of knowlege, the proposed system was to include exercises in the following areas:

Skills and values clarification. An officer's skills and values are major determinants of career satisfaction and success. Accordingly, the ability to identify these primary skills and values is important to career development. This ability has other important components:

(a) recognizing and resolving conflicts among values and skills; (b) recognizing the linkage between specific values and skills and career decisions; and (c) preparing for possible revisions of the primary skills and values throughout one's career.

Career strategies. Career planning requires the ability to translate self-and-environment knowledge into planful action. The components of this are: (a) interpreting life goals in light of one's primary values and skills; (b) developing life goals that are optimally enhancing for career development; (c) harmonizing conflicting goals; and (d) developing action plans for reaching specific objectives. Overall, "career strategies" means the ability to implement one's primary values and skills in specific, concrete actions.

Choice point identification. In a complex career system, it is important to be able to identify those points where one can choose and where that choice can make a significant difference. This includes the ability to anticipate future choices, to evaluate present choice alternatives, and to assess the irreversibility of specific choices.

<u>Career monitoring</u>. Assessing career progress is important in view of the tentative nature of career planning. Assessment requires a systematic way of continually integrating the career environment with one's primary values and skills.

The original plan for the system envisioned two forty-minute interactive dialogue units. The first of these was to be a didactic unit designed to teach and illustrate concepts about career planning. The other was to be an informational unit describing the officer career progression system in which the user would be implementing those concepts. This plan was subsequently expanded to provide additional emphasis on actual career planning tasks. Strategies for implementing one's interests and for negotiating a career throughout the life span were to be illustrated in a game mode, using individual officers' profiles and predictable events that occur in an efficer's career.

To supplement the two-module plan, then, the developmental effort was redirected to provide a more complete guide to career planning. Each component was designed to address a major consideration in career planning, and the entire system was intended to mirror the career planning and decision making process:

After the officer is instructed as to how to use the terminal (with a module called SIGNON), the initial didactic module (now called FORESIGHT) provides an introduction to the decision-making process; the informational module (called OVERVIEW) describes the occupational environment and opportunity structure in which the officers operate; a SELF-ASSESSMENT module helps users to describe themselves in relation to that environment. Data banks (such as that used by ALTERNATE SPECIALTY, a submodule of OVERVIEW, Fields, Note 7) allow them to explore the "fit" of the various alternatives of the environment given their own descriptions; and the final module (called CAREER STRATEGIES) guides the users in integrating previous information to make choices, implement decisions, and evaluate career progress.

System Description

The current system consists of interactive, or conversational, dialogue units. The user's path through the units is determined by his or her responses to questions or by selection from among alternatives posed at several choice points within each unit. (Examples are provided in Appendices A through E.) Each module is self-contained and connects with the other modules via an executive monitoring system. At present, SIGNON, FORESIGHT, OVERVIEW, and ALTERNATE SPECIALTY have been programmed and are useable in demonstration form. The remaining modules—CAPTAIN'S INTRODUCTION, SELF-ASSESSMENT, and CAREER STRATEGIES—are in script form but have not yet been programmed. The various modules are described below.

SIGNON. This introductory module introduces the officer to the system, instructs the officer as to how to use the terminal, and asks for a variety of identifying data such as military specialty, type and level of civilian education, and current military status (See Appendix A).

FORESIGHT. This module is designed to introduce the user to long-term career planning. It begins with consideration of the belief that individuals can influence their career progress if (a) they know what they want, and (b) they know how the system works. The basic career concepts described earlier are assigned code names: "Must"--choice is inevitable; "Value"--you have to know what you want; "Surprise"--unexpected events happen even if you plan; "Tension"--simultaneously firm and tentative planning; and "Stage"-- predictable life changes. The user may elect to look through any or all of the five- or six-frame interactive explanatory illustrations for each concept. The conclusion of the module integrates the concepts in a sample career path that shows an officer making choices and confronting situational changes at different stages in his career. The ability to convey to the user the most current available knowledge about career planning and career development in an understandable and thought-provoking manner is the most outstanding quality of the FORESIGHT module. (See Appendix B for an excerpt from FORESIGHT.)

OVERVIEW. This informational module includes the Army's overall plan for the progression of an officer's career and attempts to make the user aware of those factors which can influence the ways in which an officer's career develops. These include:

- --changes in needs, goals, and objectives of the Army
- --military and technological changes
- -- timing of career decisions
- --Officer Evaluation Reports
- --military education
- --alternate specialty assignment
- --civilian education and training

It dissects the patterns and determinants of Army careers with the use of a series of off-line charts and offers the user answers to a series of typically-asked questions. It reinforces the concepts introduced in FORESIGHT and adds some Army-specific concepts such as officer responsibility and dimensions of utilization and training. OVERVIEW facilitates the officer's comprehension of "how the system works"--a necessary ingredient in career decision making--and does so in a manner that enables officers to incorporate the understanding of the complex officer career progression system into their planning. (See Appendix C for an excerpt from OVERVIEW.)

CAPTAIN'S INTRODUCTION. Experience with the system has shown that, while younger officers (lieutenants) profit from FORESIGHT and OVERVIEW, officers who have achieved the rank of captain or above have already acquired much of the information contained in the modules. Therefore a substitute introductory module was designed for users already familiar with the Army Career Progression system. This module, called CAPTAIN'S INTRODUCTION, includes the information in FORESIGHT and OVERVIEW in a more abbreviated form (See Appendix D).

ALTERNATE SPECIALTY. One of the system's long-range objectives is to provide the user with access to data relevant to important choice points in an Army officer's career. The submodule of OVERVIEW and CAREER STRATEGIES, called ALTERNATE SPECIALTY, is an example of how this can be done. Due to the implementation of dual occupational specialties for Army officers, expressing a preference for an alternate specialty is a critical choice point in an officer's career. A rich data file relating officer characteristics and preferences to alternate specialty designation affords the user a unique opportunity to engage in meaningful career exploration. The ALTERNATE SPECIALTY submodule was developed to make use of this data file and includes information about the alternate specialties that are available, how they are designated, and how career plans can influence them. In making the data available to the user and in offering suggestions about useful ways to interpret them, the submodule provides the officer with the opportunity to explore and compare his or her characteristics with those of officers for whom any given specialty was designated during the previous year and to integrate this information into an effective career strategy (See Appendix E).

SELF-ASSESSMENT. Other modules (OVERVIEW and ALTERNATE SPECIALTY) have addressed the issue of "how the system works." The SELF-ASSESSMENT module is designed to help users clarify "what they want"—a necessary component of satisfactory career planning. The officer uses a representative list of skills and values to create an individualized profile based on preference and performance (skills), and subjective importance (values). The list of skills

was derived from an analysis of Army officer job performance dimensions (Oliver, Note 86) and available inventories of relevant career skills (Haldane, 1974; Katz, Chapman & Godwin, 1972). Similarly, the values list represents a combination of work value inventories (Super, 1968; Katz, Chapman & Godwin, 1972), lists of values used in industrial personnel development programs, and values derived from Army Research Institute surveys. Once the officer has created a profile, suggestions are offered about integrating self-assessment into planning and the user is asked to evaluate previous and anticipated assignments in light of this profile. (See Appendix F for an excerpt from SELF-ASSESSMENT.)

CAREER STRATEGIES. This module is designed to help officers implement their career aspirations through exercises in setting long-term goals and in translating goals into action plans for immediate objectives. The introduction conveys to the officer:

- -- that goals provide the basis for long-term planning;
- --that goals are arrived at by assessing the structure of Army career opportunities and by assessing one's own characteristics;
- --that long-term goals can only be obtained by achieving intermediate objectives; and
- -- that concrete plans of achieving intermediate objectives provide the link between career planning and intelligent action.

The process of creating a career strategy is introduced by the use of a career planning game ("SCOR") which incorporates the major aspects of an officer's career: military specialties, education and training, skills, job performance, rank, contribution, assignments, family, and values. The game uses an off-line playing board ("SCOR-BOARD") for charting hypothical career progression. The decision points in the game require the player to deal with four career issues: the inevitability of Surprise, the necessity of Choice, the awareness of Opportunities, and knowledge of Requirements. The player starts the game as a second lieutenant, selects pre-programmed goals, seeks to move toward those goals in a series of computer managed decisions, and arrives at an end point that signifies goal achievement.

At the conclusion of the game, the principles of creating career strategies are reviewed and the user is presented with the "Career Planning Wheel." This offline chart is similar to the SCOR-BOARD, but depicts the major aspects of an officer's career in more detail. The user may access computer-based career data related to the year of commissioned service in each aspect of the wheel.

After the SCOR game and the Career Planning Wheel have illustrated the use of career strategies and career information, the user is asked to review his or her own career goals. Each goal is examined with a series of eight criteria for effective career planning goals and is revised antil it satisfies the criteria. The revised goals are then translated into action plans for intermediate objectives. For example, users are guided to convert goals to actions by choosing a specific standard for gauging success, identifying resources and barriers, setting checkpoints and deadlines, and so on.

The results of this module include clarified career goals, contributory intermediate objectives, and action plans which have been tested for their adequacy. (See Appendix G for an excerpt for CAREER STRATEGIES.)

System Evaluation

In order to assess potential operating ifficulties and to obtain some initial reactions to the acceptability and usefulness to the target population, four of the seven modules (SIGNON, FORESIGHT, OVERVIEW, and ALTERNATE SPECIALTY) were field-tested on 52 company grade officers at Ft. Benning, Georgia (Oliver & Day, Note 18). Each officer was administered a pre- and post-use instrument measuring: knowledge of relevant information; attitude toward the computer as a guidance tool; and the understandability, accuracy and usefulness of each module. A post-use debriefing session was also conducted.

The results of the field trial were extremely encouraging. The users found the content of the modules to be interesting, accurate, useful, and understandable and gave highly favorable ratings to the use of the computer as a method of transmitting career information. Those officers who used the system reported a decreased need for career information and an increased level of certainty and satisfaction with alternate specialty preference. It was also found that the style and the humor of the text were considered appropriate and enjoyable.

Although no major revisions were indicated by the field trial, several adaptations and expansions of the system have since been suggested. Designed primarily for the use of company grade officers (those who have fewer than eight years commissioned service), OCIPS could well be adapted for use by field grade officers, including particularly those who had used the system in their years as junior officers. Other potential users are those who are involved in officer career management (Hadley, Marsh, & Korotkin, Note 10). Alternative entry modules, similar to the CAPTAIN'S INTRODUCTION, would introduce such personnel to the system. Proposed content expansions include a module dealing with the career planning and decision making necessary upon severance from military service. Expanded data bases could add information about military and civilian education and extended longitudinal data relating alternate specialty designation and other carear events to later career paths (Fields, Notes 7, 8, 9). The system is also capable of administering and scoring assessment instruments and could be equipped with the capacity to monitor and store patterns of system use for research and re-evaluation.

The Officer Career Information and Planning System currently exists in the first generation phase of development. Those components which have been tested in the field work well and are acceptable to the target population, however adaptations and changes are required. CAPEER STRATEGIES requires additional data and dialogues for full operation. OCIPS has demonstrated potential for expanded operations; further field testing and subsequent revision are indicated as the next phase of development. A cost-benefit analysis of the system is in progress.

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Appendix A

Excerpt from SIGNON

This module introduces the user to the system, provides instruction for using the terminal, and asks the user for identifying data.

THE SYSTEM YOU ARE ABOUT TO SEE IS AN EXPERIMENTAL ONE. THE 'OFFICER CAREER INFORMATION & PLANNING SYSTEM' IS IN A DEVELOPMENTAL STAGE AND WILL PROBABLY UNDERGO CONSIDERABLE MODIFICATION BEFORE IT IS READY FOR OPERATIONAL USE. WE APPRECIATE YOUR PARTICIPATION IN EVALUATING THE SYSTEM DURING THIS EXPERIMENTAL TRYOUT.

(ALWAYS PRESS THE 'NEW LINE' KEY WHEN YOU ARE READY 10 CONTINUE)

O.K. YOUR CODE IS 01. PERHAPS YOU SHOULD JOT IT DOWN SOMEWHERE SO YOU WON'T FORGET IT.

PLEASE TYPE THE SPECIALTY CODE NUMBER OF YOUR PRIMARY SPECIALTY. (FOR EXAMPLE: 11 FOR INFANTRY) SPECIALTY CODE NUMBERS CAN BE FOUND ON PAGE 1 OF THE OFFICER CAREER INFORMATION AND PLANNING SYSTEM HANDBOOK, WHICH IS LOCATED NEAR THIS TERMINAL.

SOOD. NOW LET'S FIND OUT ABOUT YOUR CIVILIAN EDUCATION. TYPE THE NUMBER WHICH CORRESPONDS MOST CLOSELY WITH THE AMOUNT OF EDUCATION YOU HAVE.

1. DOCTORAL DEGREE

所是是是这种的,他们就是这个是是是这个是是是是是是是是是是是这种的。

- 2. MASTER'S DEGREE
- 3. PROFESSIONAL DEGREE (MD, DDS, LLB, ETC.)
- 4. YEAR OR MORE OF POSTGRADUATE EDUCATION
- 5. COLLEGE GRADUATE
- 6. TWO OR MORE YEARS OF COLLEGE (BUT LESS THAN A BACHELOR'S DEGREE)
- 7. LESS THAN TWO YEARS OF COLLEGE
- 3. HIGH SCHOOL GRADUATE (OR LESS)

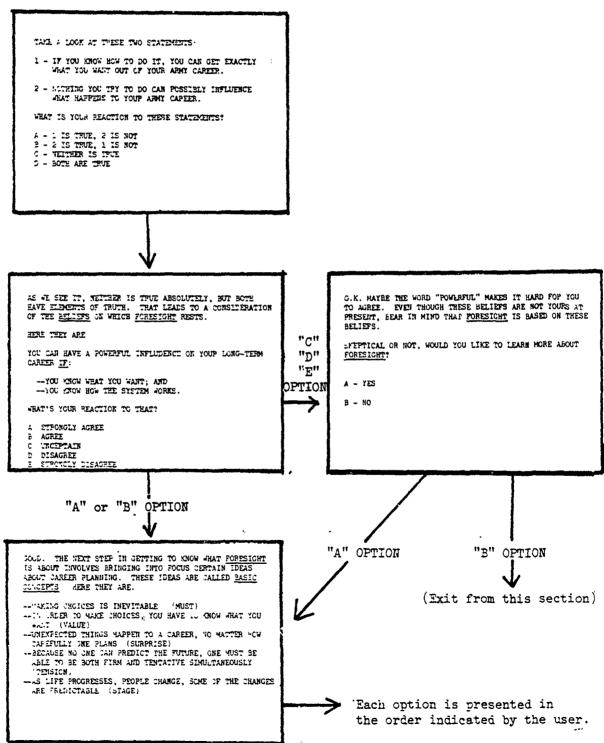
0.K. NOW FOR YOUR UNDERGRADUATE MAJOR. IF YOU DO NOT HAVE AN UNDERGRADUATE MAJOR, SELECT A GENERAL CATEGORY WHICH YOU FEEL WOULD BE MOST APPROPRIATE FOR YOU.

- A. HUMANITIES
- B. BUSINESS
- C. ENGINEERING
- D. PHYSICAL SCIENCES
- E. SOCIAL SCIENCES
- F. Lay

Appendix B

Excerpt from FORESIGHT

The user has "signed on" to the system, and, given a description of what the module contains, has opted to explore FORESIGHT further. The following frames are presented on the screen:



The state of the s

Excerpt from OVERVIEW

The introductory section of OVERVIEW stresses the complexity of the Army Officer career structure and encourages users to consult additional sources of information for details beyond the scope of OVERVIEW. The following excerpt introduces the user to the offline charts (included here) and begins the explanation and discussion of the career structure.

AS WE SAID, THE ARMI OFFICER CAREER STRUCTURE IS VERY COMPLICATED. SO WE WILL TALK ABOUT THIS STRUCTURE, OHE POINT AT A TIME, WITH THE HELP OF A SERIES OF

EACH CHART PRESENTS ONE IDEA, THEN THE MEXT CHART ADDS ANOTHER INEA.

ALONG THE WAY, WE WILL SUMMARIZE OUR IDEAS AND GIVE SCHE EXAMPLES.

ALSO, AT THE END OF THIS SECTION, WE WILL AMSWER SEVERAL QUESTIONS IN MORE DETAIL.

OUR GOAL HERE IS TO HELP YOU GET ONE BIG PICTURE OF HOW YOUR CAREER MAY DEVELOP.

PLEASE TURN TO CHART #1 OF THE HAMDBOOK, ON PAGE 6.

GKAY. YOU'RE NOW LOGKING AT OFFICER PROFESSIONAL DEVELOPMENT (OPD) CHART #1.

THE LEGEND AT THE BOTTON RIGHT OF THE CHART EXPLAINS THE SCALE.

THE IDEA HERE IS SIMPLE: THERE IS A SPAN OF TIME IN WHICH A TYPICAL OFFICER CAN EXPECT TO REACH A CERTAIN CRADE. AND HE MUST REACH THAT GRADE BY A CERTAIN TIME, IN ORDER TO REMAIN IN SERVICE.

SUPPOSE MAJOR ADAMS WAS FROMOTED TO LT. COLONEL AT HIS 13TH YEAR OF COMMISSIONED SERVICE. WAS THE PROMOTION ..

- .. BELOW THE ZONE
- .. AT THE CONE .. ABOVE THE ZONE

"A" or "C" OPTION

"B" OPTION

MAJOR ADAM'S PROMOTION TO LT. COLONEL WAS RIGHT AT THE ZONE FOR LT COLONELS, SINCE THE ZONE POINT FOR LT. COLONELS, MARKED BY A STAR $_{\rm C}$ COMES AT THE 13TH YEAR.

READY FOR THE SEXT IDEA?

- A YES.
- B DEPENDS ON THE IDEA, BUT FIRE AWAY.

MAJOR ADAM'S PROMOTION TO LT. COLCNEL WAS RIGHT AT THE ZONE FOR LT. COLONELS, SINCE THE ZONE POINT, MARKED BY A STAR, COMES AT THE

READY FOR THE NEXT IDEA?

- DEPENDS ON THE IDEA. BUT PIPE AWAY.

"A" or "B" OPTION

"A" or "B" OPTION

PLEASE LOCK AT OPD CHART #2, PAGE 7, FOR DUR NEXT POINT

THE CHART REFRESENTS THE TWO MAJOR FARTS TO EVERY LFFICER'S CAPEER <u>LEVELOWENT</u> (VERTICAL DIMENSION) AND UTILIZATION FORICONTAL DIMENSION)

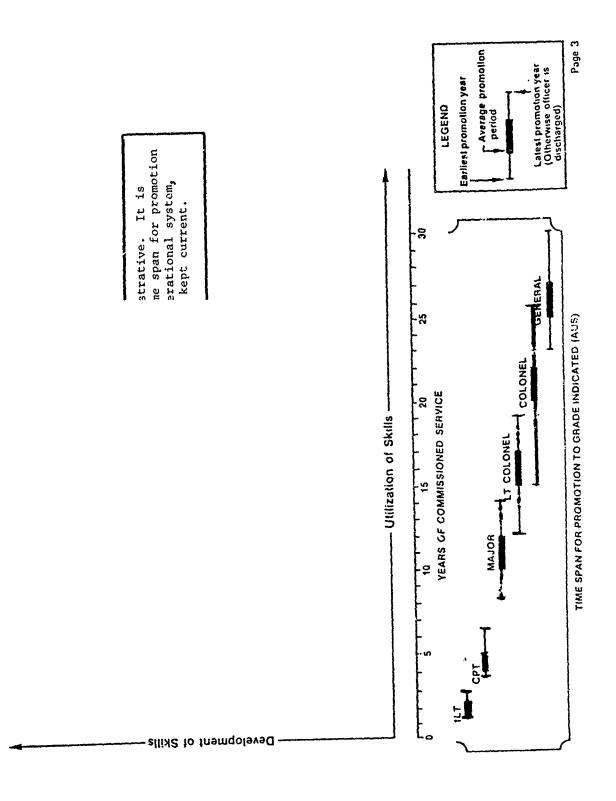
CLY LIPMENT IS WHEN YOUR ASSIGNMENTS PRYNAPILY HAVE THE ROLL OF THE FOUND YOUR SKILLS AND EDUCATION, TO WEET THE ARMY'S NEEDS IN THE FUTURE.

TILITATION MEANS MEETING PRESENT ARMY NEEDS BY DRAWING UPON SYTELS YOU ALREADY HAVE

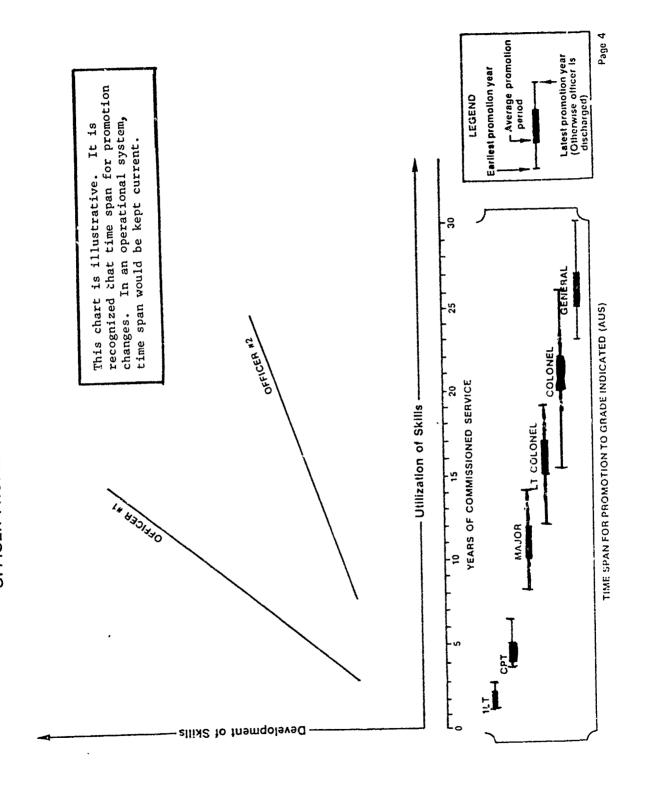
CONTINUED -ON NEXT PAGE PHECEDING PACE BLANK-NOT FILMED

LOCKING AT THE CHART, WHAT CAN WE SAY? OFFICER #1 DEVELOPED MORE SKILLS THAN DID OFFICER #2. OFFICER #2, OVERALL, PROBABLY CONTRIBUTED MORE TO THE ARMY'S NEEDS. OFFICER #1'S CAREER EMPHASIZED DEVELOPMENT OF SKILLS, MORE SO THAN DID THE CAREER OF OFFICER #2. "B" OPTION "A" or "C" OPTION WHILE WE CANNOT SAY THAT ONE OFFICER DEVELOPED FURTHER, OR THAT ANOTHER OFFICER CONTRIBUTED MORE, WE CAN SAY THAT ASSIGNMENTS MAY STRESS MEETING PRESENT ARMY NEEDS (OFFICER #2) OR MAY BE DESIGNED TO DEVELOP AN OFFICER'S SKILLS FOR LATER CONTRIBUTIONS (OFFICER #1). RIGHT. WE CANNOT SAY 14AT ONE OFFICER DEVELOPED FURTHER, OR THAT ANOTHER OFFICER CONTRIBUTED MORE. WE CAN SAY THAT ASSIGNMENTS MAY STRESS MEETING PRESENT ARMY NEEDS (OFFICER #2) OR MAY SE DESIGNED TO DEVELOP AM OFFICER'S SKILLS FOR LATER CONTRIBUTIONS BOTH EMPHASES ARE VITAL FOR AR EFFECTIVE ARMY. BOTH EMPHASES ARE VITAL FOR AN EFFECTIVE ARMY.

At this point in the module, the computer continues on to present further concepts and illustrations of the career structure, using the remaining charts in the off-line series.



OFFICER PROFESSIONAL DEVELOPMENT CHART NO. 2



Appendix D

Excerpt from CAPTAINS INTRODUCTION

This module provides the user with an abbreviated version of FORESIGHT and OVERVIEW.

THE OFFICER CAREER INFORMATION AND PLANNING SYSTEM (UC1PS) IS DESIGNED TO HELP YOU WITH LONG-TERM CAREER PLANNING. IT IS MADE UP OF FIVE SEPARATE MODULES....

- ~-FORESIGHT....DEALS WITH BASIC CONCEPTS OF CAREER PLANNING --SELF ASSESSMENT....HELPS YOU CREATE A PROFILE BASED ON YOUR RATINGS OF YOUR SKILLS AND VALUES.
- --ALTERNATE SPECIALTY....INCLUDES INFORMATION AND DATA ON ALTERNATE SPECIALTIES.
- --OVERVIEW...DEALS WITH THE ARMY'S OVERALL PLAN FOR THE PROGRESSION OF AN OFFICER'S CAREER, INCLUDING THE FACTORS THAT INFLUENCE THE WAY IT DEVELOPS.
- -- CAREER STRATEGIES....HELPS YOU SET GOALS AND DEVELOP ACTION PLANS FOR ACHIEVING THESE GOALS.

AT THIS POINT IN YOUR ARMY CAREER YOU MAY ALREADY BE ACQUAINTED WITH MANY OF THE CONCEPTS THAT ARE PRESENTED IN FORESIGHT AND OVERVIEW.

THEREFORE WE'D LIKE TO GIVE YOU THE CHOICE TO BEGIN WHERE YOU THINK IS MOST SUITABLE FOR YOUR EXPERIENCE AND INTERESTS. YOU MAY BEGIN WITH EITHER THE FULL FORESIGHT OR WITH A CONDENSED VERSION THAT HIGHLIGHTS THE CONCEPTS AND LEAVES OFF THE EXAMPLES. CHOOSE ONE:

- A: I'D LIKE TO START WITH THE FULL FORESIGHT
- " " CONDENSED FORM.
- C: SKIP IT. LET'S GO ON TO ALTERNATE SPECIALTY.

OPTION B

IN GETTING TO KNOW WHAT FORESIGHT IS ABOUT INVOLVES BRINGING INTO FOCUS CERTAIN IDEAS ABOUT CAREER PLANNING. THESE IDEAS ARE CALLED "BASIC CONCEPTS". HERE THEY ARE:

- -- MAKING CHOICE IS INEVITABLE (MUST)
- -- IN ORDER TO MAKE CHOICES, YOU HAVE TO KNOW WHAT YOU WANT (VALUE)
- --UNEXPECTED THINGS HAPP! TO A CAREER, NO MATTER HOW CAREFULLY ONE PLANS (SURPRISE)
- --BECAUSE NO ONE CAN PREDICT THE FUTURE, ONE MUST BE ABLE TO BE BOTH FIRM AND TENTATIVE SIMULTANEOUSLY (TENSION)
- --AS LIFF PROGRESSES, PEOPLE CHANGE: SOME OF THE CHANGES ARE PREDICTABLE (STAGE)

WHICH CONCEPT WOULD YOU LIKE TO LOOK AT FIRST?

MUST

- D TENSION
- VALUE
- E STAGE
- SURPRISE

Appendix E

Excerpts from Alternate Specialty

This module provides the user with data about the designation of Alternate Specialties in years past and offers suggestions about how to incorporate such data into one's own planning for expressing an Alternate Specialty preference.

WHICH OF THE FOLLOWING IS TRUE? AN ALTERNATE SPECIALTY IS A SPECIALTY IN ADDITION TO YOUR PRIMARY, DESIGNATED FOR YOUR PROFESSIONAL DEVELOPMENT AND UTILIZATION. AN ALTERNATE SPECIALTY IS A SPECIALTY WHICH TAKES THE PLACE OF YOUR PRIMARY AFTER YOUR FIRST SIX TO EIGHT YEARS IN THE ARMY. AN ALTERNATE SPECIALTY IS WHAT YOU GET WHEN THE COCK HAS RUN OUT OF PRIMARIES. OPTION A OPTION B RIGHT! LIKE A PRIMARY SPECIALTY, AN NOT REALLY. AN ALTERNATE SPECIALTY DOES NOT REPLACE YOUR PRIMARY. IT IS A SEP-ALTERNATE SPECIALTY IS A SEPARATE GROUPING OF DUTY POSITIONS HAVING ARATE GROUPING OF DUTY POSITIONS HAVING SIMILAR SKILL AND JOB REQUIREMENTS. SIMILAR SKILL AND JOB REQUIREMENTS. OPTION C

Officer Preferences: How many wanted what they got?

NO. EITHER YOU HAVE A SENSE OF HUMOR OR YOU DON'T KNOW VERY MUCH ABOUT ALTERNATE SPECIALTIES.

NEXT IS A LIST OF SOME ALTERNATE SPECIALTIES. BESIDE EACH ONE ARE THE PERCENTAGES OF OFFICERS EXTERING THAT SPECIALTY WHO LISTED IT AS THEIR FIRST, SECOND, THIRD, FOURTH, OR FIFTH CHOICE.

FOR EXAMPLE, OF THOSE ENTERING ATOMIC ENERGY, 50% HAD LISTED IT AS THEIR FIRST CHOICE, 25% AS THEIR SECOND CHOICE, 5% AS THEIR THIRD CHOICE, 7% AS THE FOURTH, NONE AS THEIR FIFTH. AND 13% HAD LISTED IT AS THEIR SLXTH CHOICE OR NOT AT ALL.

ALTERNATE SPECIALTY	1	2	3	4	5	Other
Personnel Management	39%	20%	10%	6%	3%	22%
OR/SA	51	22	5	2	1	19
ATOMIC ENERGY	50	25	5	7	0	13
R & D	43	21	8	5	1	22

Appendix F

Excerpt from SELF ASSESSMENT

The following frames are drawn from values assessment section of the SELF ASSESSMENT module. Prior to viewing this sequence, the user has considered the concept of self-assessment as a career planning tool and has evaluated his or her skills on the basis of preference and performance.

the state of the s

IN THE "PORESIGHT" MODULE IT WAS SAID THAT YOU CAR HAVE A POWERFUL INFLUENCE ON YOUR CAREER IF-SO FAR YOU HAVE LOOKED AT YOUR SICTLIS ---YOU KNOW WHAT YOU WANT AND WHAT YOU ENJOY DOING WHAT YOU DO WELL YOU KNOW HOW THE SYSTEM WORKS. IN OTHER SECTIONS YOU HAVE LOOKED AT HOW THE SYSTEM NUKKS---AND NOW WE'D LIKE YOU TO LOOK AT WHAT ECW LET'S LOOK AT WHAT SATISFACTIONS YOU WANT FROM YOUR CAREER, OR, IN OTHER WORDS, YOUR CAREER VALUES. A COOD WAY OF COMSIDERING WHAT SATISFACTIONS YOU WANT FROM YOUR CAREER IS TO IMAGINE YOURSELF IN A CURRENT OR PAST JOB SITUATION AND TO LOOK AT WHAT YOU LIKED OR DIDN'T LIKE ABOUT THAT POSITION. DOING THIS KIND OF REFLECTION OVER SEVERAL POSSIBLE JOBS GIVES YOU A PICTURE OF WHAT ASPECTS OF A JOB YOU PREFER ---- OR, IN OTHER WORDS, WHAT YOU VALUE IN A JCB. ON PAGE----OF THE HANDBOOK IS A LIST OF VALUES EVERY PERSON HAS HIS OR HER OWN SET OF VALUES AND YOUR TASK HERE IS TO IDENTIFY THOSE THAT ARE MOST DEPORTANT TO YOU. SINCE IT IS YOUR CAMEER, WE'D LIKE YOU TO CONSIDER YOUR OWN VALUES CAREFULLY WITHOUT BEING INFLUENCED BY WHAT YOU THINK OTHER OFFICERS MAY VALUE. THE VALUES WILL APPEAR ON THE SCREEN IN SETS OF WINE. USING THE FOLLOWING SCALE, PATE EACH VALUE. . VERY IMPORTANT 2 OF AVERAGE IMPORTANCE 3. LEAST EMPORTANT CONTINUED ON NEXT PAGE 29 PRECEDING PAGE BLANK-NOT FILMED

ued

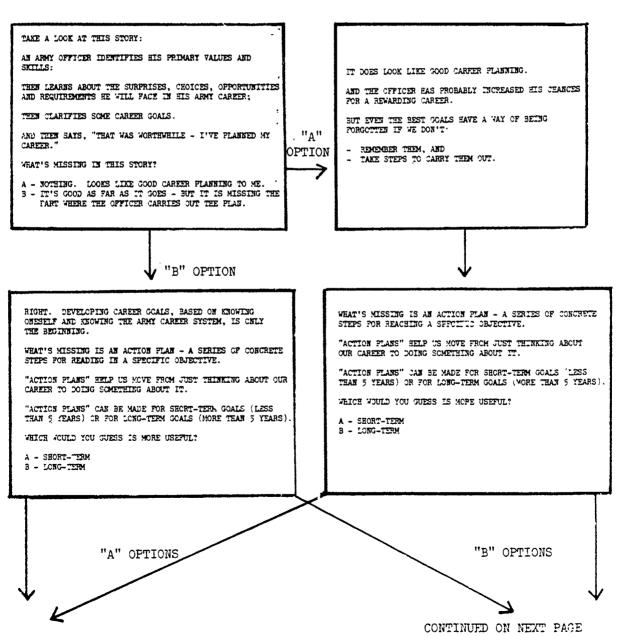
A. A.	ppendix F, contin
LEADERSHIP RATIEC SCALE. AJSOCIATES 1. VERY IMPORTANT HELPING OTHERS 2. OF AVERACE IMPORTANCE SUPERVISORY RELATIONS 3. LEAST IMPORTANT ADVENTURE, RISK, EXCITEMENT VARIETY SELF-IMPROVEMENT ACHIEVIMENT CREATIVITY	
USE OF SKILLS RATING SCALE- PRESTIGE 1. VERY IMPORTANT SURROUNDINGS 2. OF AVERAGE IMPORTANCE SECURITY 3. LEAST IMPORTANT LEISURE PHYSICAL ACTIVITY MONEY FAMILY RELIGION RELIGION	
HERE'S HOW YOUR RATINGS CAME OUT MCST IMPORTANT AVERAGE IMPORTANCE LEAST IMPORTANT ADVENUER, RISK, EXCITEMENT ASSOCIATES EXCITEMENT SUPERVISORY RELATIONS SURROUNDINGS ACHIEVEMENT PRESTIGE LEISURE PHYSICAL ACTIVIONNEY SECURITY ITY FAMILY RELIGION IF YOU HAVE A PRINTER ATTACHED TO YOUR CRT, AND YOU WOULD LIKE A COPY OF THESE LISTS, YOU MAY GET ONE BY CRESSING "PRINT LOCAL."	EXAMPLE

After this rating process, the user is asked to rank those values designated "most important" in order of relative importance and is offered suggestions about using this self-assessment in career planning.

Appendix G

Excerpt from CAREER STRATEGIES

The following frames are drawn from the final section of CAREER STRATEGIES. The user has, at this point in the module, played the "SCOR" game, examined questions of interest in the Career Strategies Data Base, revised and set career goals, and is now facing the task of combining these and previous sections of OCIPS into an integrated career Action Plan. This sequence appears on the screen.



Appendix G, continued

. "A" OPTIONS

RIGHT. ACTION PLANS ARE MORE USEFUL FOR SHORT-TERM THERE ARE TWO PROBLEMS WITH ACTION PLANS FOR LONG-RANGE GOALS:

AS CUR "SCOR" DAME SHOWED, THERE ARE SO WARY SURPRISES, AND CHOICES, AND SO FORTH, TEAT "LONG-TERM" ACTION PLANS ARE SURE TO SECOME OBSOLETE LONG SEFORE THE COAL IS REACHED; AND

A "LONG-TERM" ACTION PLAN WOULD BE TOO LONG TO BE VANAGEABLE - HUNDREDS OF CONCRETE STEPS MIGHT MAKE YOU FEEL IT'S NOT WORTH TAKING THE FIRST STEP.

SO HOW DO YOU PICK A SHORT-TERM GOAL TO MAKE THIS "ACTION PLAN" FOF" HEPE ARE SOME WAYS - CHOOSE OME.

- A LOOK AT ONE OF YOUR LONG-RANCE GOALS AND SEE WHAT YOU HAVE TO DO WITHIN THE MEXT 5 YEARS TO REACH IT. B PICK A GOAL YOU KNOW YOU MUST REACH WITHIN 5 YEARS,

"B" OPTIONS

WEILE ACTION PLANS MIGHT BE HELPFUL FOR REACHING LONG-TERM GOALS, THERE ARE TWO ANNOYING FROBLEMS:

AS OUR "SCOR" GAME SHOWED, THERE ARE SO MANY SURPRISES, CHOICES, AND SO FORTH THAT "LONG-TERM" ACTION PLANS ARE SURE TO SECOND OBSOLETE LONG SEFORE THE GOAL IS REACHED

A "LONG-TERM" ACTION PLAN WOULD BE TOO LONG TO BE MANAGEABLE - BUNDREDS OF CONCRETE STEPS WIGHT MAKE 10U FEEL IT'S NOT WORTH TAKING THE FIRST STEP.

WE SUGGEST THAT ACTION PLANS ARE MOST USEFUL FOR "SHORT-

SO BOW DO YOU PICK A SHORT-TERM GOAL TO MAKE THIS "ACTION

HERE ARE SOME WAYS - CHOOSE ONE.

- A LCOK AT ONE OF YOUR LONG-RANGE GOALS AND SEE WEAT YOU
- BAVE TO DO WITHIN THE MEXT 5 YEARS TO REACH IT. B PICK A DOAL YOU KNOW YOU MUST REACH WITHIN 5 YEARS, OR ELSE.

SOTE TACTICS HAVE MERIT. LOOKING AT YOUR LONG-RANGE GOALS HELPS MAKE SURE THAT YOUR PRESENT EMBEAVORS HAVE A LONG-RANGE PAYOFF. BUT LOOKING AT YOUR SHORT-TERM "MUST'S" HELPS MAKE SURE YOU JOH'T NEGLECT ANTIHING IN THE SHORT NUM, REGARDLESS OF YOUR SPECIFIC

THE UPSHOT IS GOOD CAREER PLANNING MEANS MAKING MORE THAN ONE ACTION PLAN.

SO NOW YOU KNOW THAT GOOD CAREER PLANNING MEANS:

- IDENTIFYING VALUES AND SKILLS.
- RECOGNIZING THE SURPRISES, JEGICES, OPPORTUNITIES AND REQUIREMENTS IN AN ARMY CAREER,
- CLARIFYING CAREER GOALS, AND
- MAKING ACTION PLANS FOR MEETING TEOSE COALS.

ONE MORE THING: WHEN SECULD YOU MAKE YOUR ACTION PLANS?

- A RIGHT NOW
- 3 DEPENDS OF WEAT HAPPENS FEET I MONITOR MY CAREER. C HEY, HOLD IT A MINUTE FHAT'T THIS "MONITORING MY CAREER" BUSINESS:

At this point in the module, the concept of career monitoring is presented and related to action planning, and the user is offered directions for creating action plans using his or her own data.

V

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1 US AHMY WESTERN COMMAND ATTN: APPE
1 HQDA ATTN: DAAG-ED
  HQ. ICATA ATTN: ATCAT-OP-Q
  HQ. USMEPCOM ATTN: MEPCT
  HQUA RESEARCH AND STUDIES OFC
1 MILITARY OCCUPATIONAL DEVELOPMENT DIV DAPC-MSP-0, RM 852C HOFFMAN BLOG 1
1 HQDA OFFICE OF THE CHIEF OF CHAPLAINS
  DASD (MRA AND L)
1 HODA ATTN: DAMO-ROR
1 HQDA
        ODCSPER
        ATTN: DAMI-ISI
  HQDA
  USA AVIATION SYSTEMS COMU ATTN: DRSAV-ZDR
1 EQUAL OPPORTUNITY BRANCH ATTN: AFZT-PA-HR
  USA ARRADCOM ATTN: ATFE-LO-AC
1 HEADWUARTERS US MARINE CORPS ATTN: CODE MTMT
1 HEADWUARTERS, US MARINE CURPS ATTN: CODE MPI-20
2 US AHMY EUROPE AND SEVENTH ARMY
1 1ST INFANTRY DIVISION AND FT. RILEY ATTN: AFZN-UPT-T
1 CHIEF, ATTITUDE + UPINION SURVEY DIVISION ATTN: ATZI-NCR-MA, HOFFMAN BLDG II
1 USA INTELLIGENCE AND SECURITY COMMAND ATTN: IAOPS+TNG-T
2 HQ THADOC TECHNICAL LIBRARY
  MILITARY OCCUPATIONAL DEVELOPMENT DIRECTORATE ATTN: ATZI-NCR-MS-M. RM 3N33 HOFFMAN BLDG II
  DATA ANALYSIS DIVISION ATTN: ATZI-NCR-MD. HOFFMAN BLDG II
  USA MILPERCEN ATTN: DAPC-POO-T
  USA URDNANCE + CHEMICAL CENTER AND SCHOOL
                                               ATTN: ATSL-DTC-P
I HODA ARMY FORCE MODERNIZATION COURDINATION OFFICE
1 HQDA ATTN: DASG-PTB
  123D USARCOM RESERVE CENTER
  US AHMY SOLDIER SUPPORT CENTER ATTN: ATSG-HDD (DR: CAVINESS)
  USA FORCES COMMAND AFPR - DEPTY CHIEF OF STAFF FOR PERSONNEL
  DIRECTORATE OF TRAINING ATTN: ATZU-T
DIRECTORATE OF COMBAT DEVELOPMENTS ATTN: ATZU-D
  HODANCOM MARINE CORPS LIAISON OFC
DEPARTMENT OF THE ARMY US ARMY INTELLIGENCE + SECURITY COMMAND
  ANNISTON ARMY DEPOT ORGANIZATIONAL EFFECTIVENESS
 1 ARTAIS ATTN: URCPM-TDS-TU
1 USA FORCES COMMAND
  PM THADE
  US MILITARY DISTRICT OF WASHINGTON OFC OF EQUAL OPPORTUNITY
  NAVAL CIVILIAN PERSONNEL COMO SOUTHERN FLD DIV
22 ARI LIAISON OFFICE
 1 7TH ARMY TRAINING COMMAND
  HQDA. OCS STUDY OFFICE
  DEPARTMENT OF THE NAVY
                            HUMAN RESOURCE MANAGEMENT DIVISION (OP-15)
  DEPARTMENT OF THE NAVY
                            HUMAN RESOURCE MGT AND PERSONAL AFFA'IRS DEPT
  DEPARTMENT OF THE NAVY HUMAN RESOURCE MGT AND PERSONAL AFFAIRS DEPT
 1 NAVAL MILITARY PERSONNEL CUMMAND (N-62)
 1 NAVAL MILITARY PERSONNEL COMMANU (N-61)
 1 NAVAL MILITARY PERSONNEL COMMANU (N-4)
1 HUMAN RESOURCT MANAGEMENT CENTER
  HUMAN RESOURCE MANAGEMENT CENTER
  U.S. NAVY TRAINING ANALYSIS EVALUATION GROUP
 1 USACHEC ATTN: ATEC-EX-E HUMAN FACTORS
 1 ATTN: SM-ALC/DPCR
   INTER-UNIV SEMINAR ON ARMED FORCES . SOC
  DASA (RDA) DEPUTY FOR SCIENCE AND TECHNOLOGY
 1 OFC UF NAVAL RESEARCH /
 1 AFHRI/LRT
 I AFHRI /LRLG
 1 AIR FORCE HUMAN RESOURCES LAB ATTN: AFHRL/TSR
 1 NAVY PERSONNEL R AND D CENTER /
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1 NAVY PERSONNEL R AND D CENTER DIRECTOR OF PROGRAMS
1 NAVY PERSONNEL R AND D CENIER /
2 OFC OF NAVAL RESEARCH PERSONNEL AND TRAINING RESEARCH PROGRAMS
1 NAVAL PERSONNEL R + D CENTER
1 OFC UF NAVAL RSCH ORGANIZATIONAL EFFECTIVENESS PRO-
1 MCFANN-GRAY + ASSOCIATES, INC.
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